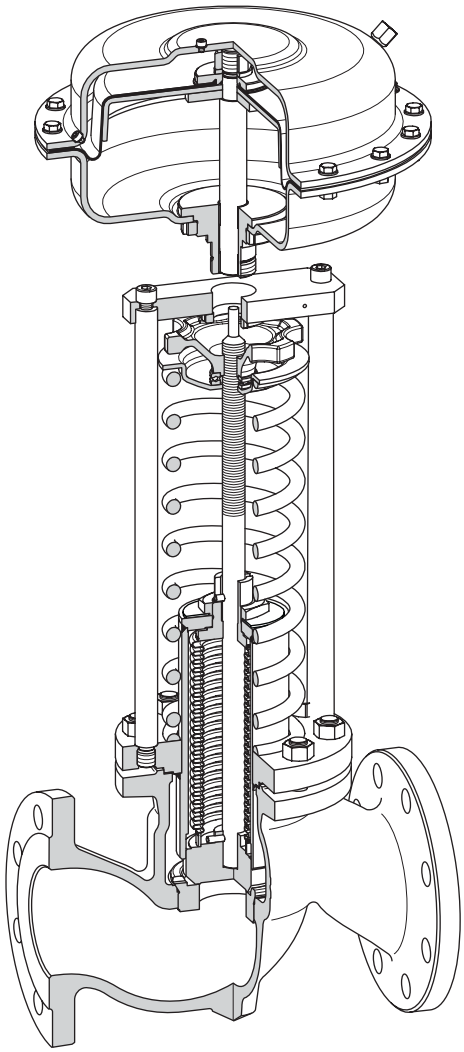


Description

1.Robust and stable performance.

2.Bellows seal, reducing maintenance.

3.The balanced bellows control accuracy and stability.

4.A wide range of downstream pressure control.

Selection of possible applications

Self-actuating Pressure Reducing Valves are used to provide a constant pressure ÿÿdownstreamÿÿ of its built-in position.High degree of accuracy in the outlet let pressure by carefully selected springs. Suitable for steam, non inflammable vapours and gases and neutral liquids

Selection of possible flow media

Steam, gases, hot water,non inflammable vapours and neutral liquids.

Form of Connection, Nominal Pressure Range

Form of Connection	Material	PN	Nominal Size DN											
			15	20	25	32	40	50	65	80	100	125	150	200
Flanges(DN15-DN200) acc, to DIN 2526	Ductile iron	10	•	•	•	•	•	•	•	•	•	•	•	
		16												•
		25							•	•	•	•	•	•
Screw(DN15-DN50) acc, to DIN 2440	Cast/ Stainless steel	10	•	•	•	•	•	•						
		16												
		25							•	•	•	•	•	•
		40												

Pressure-Temperature Ratings

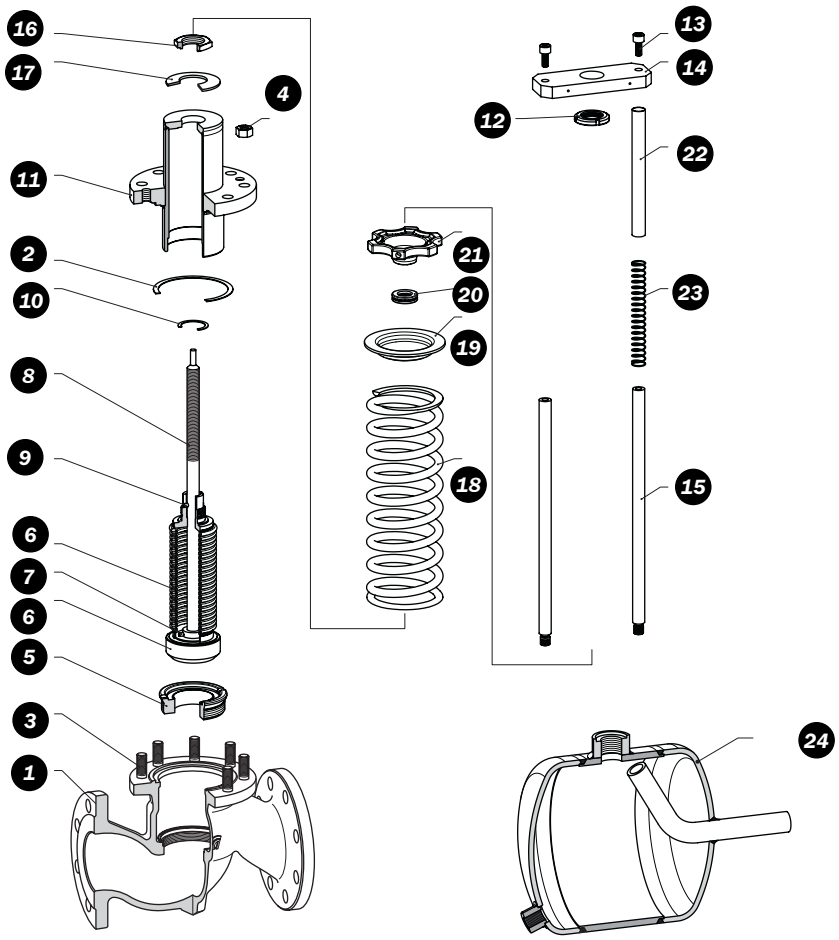
PN	Material	Service Temperature in oC	-85	-60	-10	0	120	200	250	300	350	400	450	500	530
10	Ductile iron	Working Pressure in bar			10	10	10	8	8	7	6				
	Cast steel				10	10	10	8	7	5	4	3			
	Stainless steel				10	10	8,4	7,3	6,9	6,5	6,1	5,7			
16	Ductile iron	Working Pressure in bar			16	16	15	13	12	11	10				
	Cast steel				16	16	16	14	13	11	10	8			
	Stainless steel				16	16	13	12	11	10	10	9			
25	Ductile iron	Working Pressure in bar			25	25	24	20	19	17	16				
	Cast steel				25	25	25	22	20	17	16	13			
	Stainless steel				25	25	21	18	17	16	15	14			
40	Cast steel	Working Pressure in bar			40	40	40	35	32	28	24	21			
	Stainless steel				40	40	34	29	28	26	24	23			

Disk Plug

Characteristic: linear

kvs (m3/h)	Port Size (mm)	Stroke (mm)	Material/Design 1.4571 standard	Incorporable seat diameter depends on nominal size DN											
				15	20	25	32	40	50	65	80	100	125	150	200
1,8	12	4	•	•	•	•									
3,0	20	5	•	•											
5,0	20	5	•		•										
8,0	20	5	•			•									
10	20	6	•				•								
15	25	6	•					•							
25	32	8	•						•						
38	40	9	•							•					
59	50	11	•								•				
87	65	12	•									•			
150	86	16	•										•		
204	105	17	•											•	
255	120	18	•												•

Parts List



Designation	Part	Materials		
Body	1	Ductile iron	Cast steel	Stainless steel
Bonnet Gasket	2	Pure Graphite on Support Plate from 1.4571		
Stud Bolt	3	YK		A2-70
Hex Nut	4	YK		A2-70
Screwed Seat	5	1.4571		
Plug / Bellows Unit	6	1.4571		
Straight Pin	7	1.4021		
Stem	8	1.4021		
Spring Pin	9	1.1231		
Gasket	10	Pure Graphite on Support Plate from 1.4571		
Bonnet	11	1.0460		1.4571
Lock Nut, Actuator	12	Steel, chromatized		
Cylinder Head Stud	13	8.8, chromatized		
Plate	14	1.1191, chromatized		
Column	15	1.0736, chromatized		
Hex Nu	16	1.0501		
Belleville Spring	17	1.8159		
Compression Spring	18	1.7103, chromatized		
Upper Spring Plate	19	Sheet Steel, painted		
Ball Bearing	20	Chrome Steel		
Hand Wheel	21	0.6025, painted		
Setting Scale	22	1.0308		
Spring	23	1.1191, chromatized		

Seal Tank	24	1.0308	1.4571

Parts List

Leakage-class acc. to DIN 3230 Teil 3

Plug	Plug Design	Leakage-class acc. DIN 3230 - BO	Test Medium	Test Pressure (bar)	max. Seat Leckage
standard	metal-to-metal seated, reseated	Class 1 - tight	Air	Working Pressure, max. 6	0,0 - tight

Actuator Selection

Incorporable Actuator Size depends on Adjustment Range and Nominal Size:

Adjustment Range (bar g)	Nominal Size DN											
	15	20	25	32	40	50	65	80	100	125	150	200
8 - 20	B11							A11	B2			
8 - 16,5										A11		
3,2 - 10								A2				
2,4 - 10						A11						
1,1 - 10	A11											
1,8 - 4,5										A3		
1,2 - 4,0								A3				
0,8 - 3,0						A3						
0,8 - 2,2										A4		
0,4 - 1,5								A4				
0,4 - 1,1										A51		
0,1 - 1,4	A4											
0,1 - 1,0						A4						
0,1 - 0,6								A51		A6		

Deviation

The characteristics of the Pressure Reducing Valve is like a proportional controller. Their construction therefore has a max. permanent deviation dependent on the nominal size and actuator size.

Actuator Size	max. Deviation in bar for Actuator / Nominal Size DN											
	15	20	25	32	40	50	65	80	100	125	150	200
B11	0,23	0,37	0,56	0,64	0,90	1,00	1,92					
B2									1,99			
A11	0,11	0,19	0,29	0,32	0,43	0,43	0,68	1,21		1,75	2,12	2,21
A2								0,59	1,02	1,04	1,27	1,32
A3						0,16	0,23	0,32	0,48	0,65	0,79	0,82
A4	0,02	0,02	0,04	0,04	0,06	0,06	0,08	0,11	0,14	0,24	0,28	0,30
A51								0,05	0,07	0,12	0,14	0,15
A6										0,06	0,08	0,08

Operating Medium Temperature > 100 °C

If the medium temperature is 100 > °C the use of a Seal Tank is essential otherwise the diaphragm of the actuator will be destroyed

Seal Tank	Nominal Size DN											
	15	20	25	32	40	50	65	80	100	125	150	200
1	G1											
2								G2				
3										G3		

Installation recommendation

The successful employment of the Pressure Reducing Valve depends directly on a suitable design of the mounting arrangement. As the function of the Pressure Reducing Valve depends greatly on the consideration of the physical possibilities, it is recommended to observe the stated standard values. Deviations may lead to considerable fluctuations in the control loop for which the Pressure Reducing Valve manufacturer rejects any liability whatsoever. In borderline cases, an expensive conversion of the piping should be expected. Even though the physical processes may in individual cases justify a deviation from the standard values, however, this requires a comprehensive system knowledge and the express approval of the manufacturer.

Physical requirements

Pressure Reducing Valves are used primarily for steam, non inflammable vapours and gases. It also has limited use for neutral liquids , because the close direction of the plug is in the flow direction of the medium and that can produce vibrations (hammer) at a utilisation for less than 20 %.

Realistic rangeability 1 : 10

At service conditions of more than 100 °C it is necessary to protect the diaphragm against overheating by using a seal tank

Ensure that the outlet velocity for

vapours and gases is less than 70 m/s and
liquids and wet steam is less than 8 m/s,

otherwise the standards for friction loss, wearing, pressure shock and noise of flow will be increase distinctly.

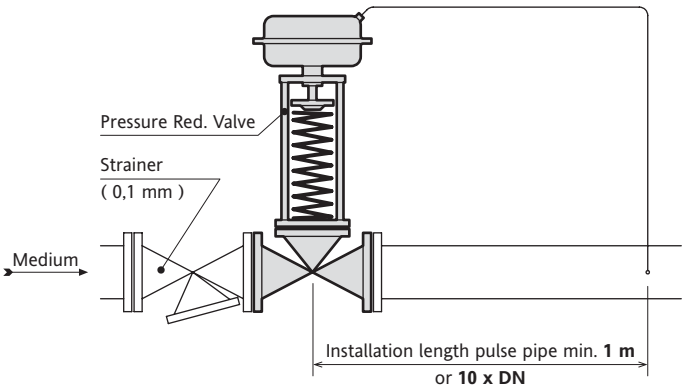
The safe load relative differential pressure depends on nominal size and is for

DN 15 - 50 max. 24 bar
DN 65 - 100 max. 20 bar
DN 150 - 200 max. 15 bar,

otherwise the trim can be overloaded.

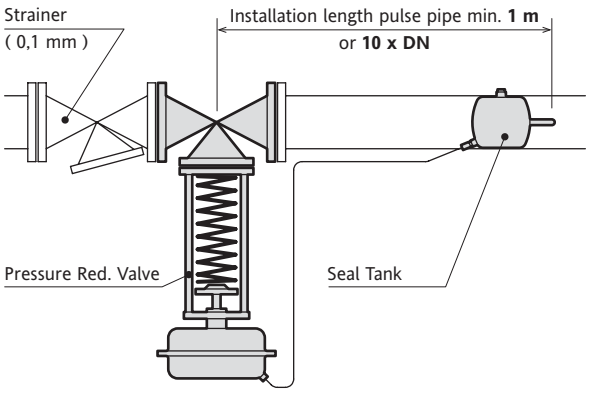
System requirements

System drawings with design recommendation. Experience shows that deviations result in considerable problems.



Installation at service conditions < 100 °C

Installation at service conditions > 100 °C



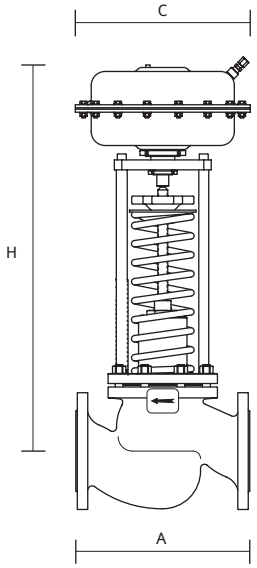
For installing a water seal tank be carefully to place it higher up than the valve actuator !

Installation

At service conditions more than 100 °C pour water into the filler socket of the seal tank until it emerges from the vent without bubbles. Now close the vent screw and continue filling until the water reaches a heigth of 35 mm below the top level of the filler socket. After closing the filler socket, the pressure reducing valve is ready to work.

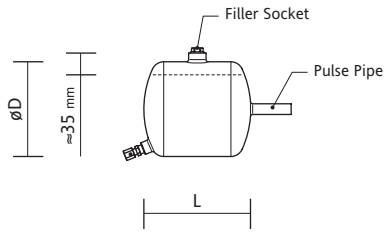
At service conditions less than 100 °C and gaseous the pressure reducing valve is ready to work. In case of liquid, the actuator must be filled completely with liquid by using its upper vent screw.

Dimensions and Weights



Designations		C	Nominal Size DN 15	20	25	32	40	50	65	80	100	125	150	200
A	Face to Face Dimensions in mm acc. to EN 558-1 basic line 1		130	150	160	180	200	230	290	310	350	400	480	600
≈ Height in mm	H with Actuator B11	150	490	490	490	510	525	600	605					
	H with Actuator B2	160									700			
	H with Actuator A11	150	490	490	490	510	525	600	605	690		805	825	860
	H with Actuator A2	160								690	690	805	825	860
	H with Actuator A3	195						600	605	690	690	805	825	860
	H with Actuator A4	270	510	510	510	530	545	620	625	710	710	825	845	880
	H with Actuator A51	355								775	775	890	910	945
	H with Actuator A6	510										925	945	980
≈ Weight in kg	Weight with Actuator B11		10	11	12	15	17	22	30					
	Weight with Actuator B2										60			
	Weight with Actuator A11		10	11	12	15	17	22	30	43		85	118	179
	Weight with Actuator A2									45	59	87	120	181
	Weight with Actuator A3							25	33	46	60	88	121	182
	Weight with Actuator A4		12	13	14	17	19	24	32	45	59	87	120	181
	Weight with Actuator A51									58	72	100	133	194
	Weight with Actuator A6											110	143	204

Seal Tank



Designation	Seal Tank Dimensions G1 suitable for DN 15 - 65	G2 suitable for DN 80 - 100	G3 suitable for DN 125 - 200
L Length in mm	206	172	250
øD	88,9	152,4	152,4
Pulse Pipe		ø 17,2 x 2,6	
Weight in kg	1,7	3,5	4,9